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PRO₂ check Elite®

Multifunction Concentrator Indicator

Operation Manual

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PRO2 check Elite®

Multifunction Concentrator Indicator

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Manufactured by
Salter Labs® - Arvin, California

PRO2 check Elite®
Multifunction Concentrator Indicator

WARRANTY

Salter Labs® will extend the following warranty to the original purchaser of the *PRO2 check Elite® Multifunction Concentrator Indicator:*

If the unit becomes inoperable prior to two years from date of purchase for any reason other than:

1. Unusual, abusive use or handling
2. Dead, defective battery
3. Water or water vapor has been introduced into unit.

Salter Labs® will, at its option, have the unit repaired or replaced. If repair is authorized, **Salter Labs**® will not charge for parts or labor. Purchaser will be responsible for all shipping charges to return the unit to **Salter Labs**®. **Salter Labs**® will be responsible for normal shipping charges for the return of the unit to purchaser.

All warranties are voided if the *PRO2 check Elite®* unit has been opened or tampered with in any way.

If claim is made after two years from the date of purchase and unit is inoperable, all costs involved in such repair are to be paid by the purchaser.

In the event that the unit becomes inoperable, the purchaser should promptly notify **Salter Labs**® for instructions in handling repair/return of the unit. *Any return without prior authorization from **Salter Labs**® is at purchaser's expense and risk.* **Salter Labs**® does not assume any other liability except as stated above.

Trouble Shooting Checklist *(Continued)*

Complaint	*Probable Cause*	*Suggested Corrective Action*
Display shows **"err"** during calibration	Calibration was performed incorrectly or wrong calibration gas was used.	Ensure USP oxygen (≥ 99.0%) is being used and re-perform procedure according to directions in the Operation Manual.
Display shows **"err"** during use	Unit has made a reading outside normal ranges.	Check calibration. Make sure gas being measured is from oxygen concentrator.
"LO BATT" appears in display screen when unit is turned on	Battery is low.	Change battery.
Display shows **"err"** or a reading other than 100% ± 2% after full calibration	Unit may have been used to check a concentrator with a humidifier bottle in line or water has gotten inside of unit.	Call Salter Labs® Customer Service Department at (800) 235-4203 for authorization to return unit for repair.

WARNING NOTES

USAGE: The PRO2 check Elite® Multifunction Concentrator Indicator is designed for intermittent usage to determine the **oxygen concentration**, **flow,** and **outlet pressures** produced by an oxygen concentrator. It may also be utilized to do spot checks of gaseous or liquid oxygen.

WARNING: The unit is not designed nor intended for use in anesthesia applications, or for monitoring oxygen concentration from any source other than a conventional oxygen concentrator using molecular sieve beds. This unit will not withstand fluid spillage. The unit will not withstand mechanical shock or vibration.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and if not installed in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- *Reorient or relocate the receiving antenna*
- *Increase the separation between the equipment and receiver.*
- *Connect the equipment into an outlet on a circuit different from that, to which the receiver is connected.*
- *Consult the dealer or an experienced radio/TV technician for help.*

INTRODUCTION

Thank you for purchasing a *PRO2 check Elite® Multifunction Concentrator Indicator*. By using this single, easy to operate device a home care provider can quickly and accurately perform all of the most common field tests required to service oxygen concentrators:

- Measurement of the concentration of oxygen delivered from the concentrator
- Verification of accuracy of the concentrator's built-in flow control with in the tolerance of the measuring device and altitude adjustment if needed.
- Ensuring that the unit is operating within manufacturer's output pressure specifications

When used to measure the concentration of oxygen being produced, the device utilizes technology already used in many oxygen concentrators to trigger "Low O_2" alarms - ***ultrasound***. By combining this proven sensor technology with built-in pressure and flow measurement instruments, Salter Labs® has produced in a single unit a simple, convenient, and more cost effective product to check the major output parameters of oxygen concentrators. The indicator when operating in the oxygen concentration measurement mode responds faster, has no fuel cell to replace, and is simpler to use than a fuel cell analyzer. The flow and pressure measuring functions of the unit allow the provider to quickly and easily measure these outputs without changing equipment.

INITIAL SETUP

1. Remove the *PRO2 check Elite® Multifunction Concentrator Indicator* from the package. Make sure you have the following items:
   - *PRO2 check Elite®* indicator unit
   - 9-volt battery (factory installed) – Spare Battery also included.
   - 2 foot connecting tubing
   - Carrying case and strap
   - Operation Manual

2. The *PRO2 check Elite®* was calibrated at the factory. However, the proper calibration of the unit's oxygen concentration measurement mode can be quickly and easily verified by following the "Pure Oxygen Verification" procedure on page 7 of this manual.

3. If accreditation organizations or internal policies and procedures require routine calibration, instructions on performing both a "Quick One Step Calibration Procedure" to USP oxygen can be found on page 7 of this manual. A "Full Two Step Calibration Procedure" to both USP oxygen and room air can be found on page 8 of this manual. Instructions on calibrating the pressure and flow measurement functions of this device are found of page 9 of this manual.

Trouble Shooting Checklist

Complaint	*Probable Cause*	*Suggested Corrective Action*
Display is **blank** when unit is turned on.	Bad batteries. Corroded battery terminals.	Replace batteries. Clean battery terminals.
When unit is turned on display flashes **"PRO O2 @ CAL"** and then turns off.	Unit requires calibration.	Perform "Full Calibration Procedure" outlined in Operation Manual.
Display reads **91.8%** on a source of USP oxygen (≥ 99.0%).	Unit is operating in mode to check concentrators and is adjusting for concentrator's output of argon.	With unit still connected to source of USP oxygen (≥ 99.0%) push and continue to hold down **"pure O_2/calibrate"** button to temporarily remove argon correction from unit's software.
Display reads between **98% to 102%** (but not 99.9%) on a source of USP oxygen (≥ 99.0%) with button held down.	Unit requires quick calibration.	With unit still connected to source of USP oxygen (≥ 99.0%) push and hold down **"pure O_2/ calibrate"** button until display reads 99.9% - 101 (approximately 20 seconds). The unit is then recalibrated.
Unit is out of 98% to 102% range after quick calibration.	Unit requires full calibration.	Perform "Full Calibration Procedure" outlined in User Manual.
"---" appears on display while unit is being calibrated.	Incomplete calibration.	Release the **"pure O_2/calibrate"** button and restart calibration process.
Display shows **"-U-"**.	Indicates an out of range reading.	Perform "Full Calibration Procedure" outlined in User Manual.

Why doesn't the unit drop immediately to room air?
Oxygen is heavier than room air, so it will linger inside the unit. When there is a flow (either from room air or another concentrator), the reading will change immediately.

Can I exhale (blow) into the unit to reach room air?
No. You may apply a small suction or flow of room air, but do not exhale into the unit.

When I am in the Concentrator Mode and hook the unit up to a USP oxygen(≥ 99.0%) source the LCD does not read 99% (± 2), why?
When the unit is in its default (concentrator) mode the device's software enables the unit to measure the output of an oxygen concentrator by compensating for the argon that passes through the sieve beds. In this mode, it will display a false reading (usually 91.8%) if connected to an oxygen source other than a concentrator. Pressing and holding the "**pure O_2/calibrate**" button removes the argon compensation and allows the device to measure the oxygen purity with ± 2% of compressed gaseous or liquid oxygen.

When I am in the Concentrator Mode and hook the unit up to a USP oxygen source the LCD the display reads - "Concentrator O_2 90.1" (approx). What's wrong?
Nothing. When in the Concentrator Mode, the electronic components of the indicator automatically compensates for the argon found in the gas produced by an oxygen concentrator. As a result the display will read approximately 90% unless this function is over-ridden by pushing the "**pure O_2/calibrate**" button.

Whenever I check concentrators with the PRO2 check Elite® , I consistently get an O_2 concentration reading of 96.0 on every concentrator. Why?
Concentrators work at their maximum efficiency (96.0%) at lower flow rates. When the flow rate is increased the output of the concentrator typically will decrease slightly. If you question whether the device is functioning properly, stabilize it to room air and then re-test with the concentrator set on the maximum flow rate or beyond. Be sure to allow the concentrator to stabilize at the higher flow rate before testing. This may take as long as 10 minutes.

Will the unit lose calibration when I change batteries?
No. The unit holds calibration even when the battery is removed.

CONNECTIONS, CONTROLS & DISPLAYS

Inlet Ports:

There are two aluminum inlet ports on the top of the PRO2 check Elite® unit. These are used to connect the device to a concentrator or other oxygen source:

a. The left port is used when measuring the outlet pressure of an oxygen concentrator.

b. The other port is used to measure oxygen flows and concentrations and to do verifications and calibrations relating to oxygen concentrations.

The same connecting tube supplied with the PRO2 check Elite® device is used to connect either port to a concentrator or another oxygen source.

LCD Display:

The PRO2 check Elite's® LCD displays values and directions during the testing, calibration and verification procedures. These readouts are discussed in the other sections of this Operation Manual. When in the Pressure Mode, the unit can display gauge pressure in either Kilopascal (HPA)* or Pounds per Square Inch (PSI). See page 10 for information on setting pressure display. Additionally, the LCD Display functions as a **Low Battery Indicator.** When the LCD displays **"LO BATT"** in the lower left corner, the battery is low and should be replaced. See directions for Battery Replacement on page 10 of this manual.

Control Buttons:

There are four (4) control buttons on the PRO2 check Elite® device:

a. Pushing and releasing the button on the lower left-hand side of the PRO2 check Elite® unit marked **"on/off"** turns the device on and off. The buttons marked **"pressure"** and **"flow"** are used to change the operating modes of the unit to measure pressure or flow from a concentrator (See page 5). These buttons are also utilized to calibrate the pressure and flow modes of the unit (See page 9).

b. The button **"pure O_2/calibrate"** is used to calibrate all three operational functions of the device. (See pages 7-9 for instructions on calibration).

Back of Unit:

The back of the unit has a door to allow battery replacement. (See page 10 for instructions).

HPA on the display represents Kilopascals (kPa)

INSTRUCTIONS FOR CHECKING O_2 CONCENTRATORS

To turn unit on and off: To turn the unit on or off press and release the **"on/off"** button on the lower left-hand side of the unit. (EXAMPLE: Concentrator O_2 20.9) When the unit is turned on the device defaults to the mode in which the software enables the unit to measure the output of an oxygen concentrator compensating for the argon that passes through the sieve beds. The display will read **"PRO"**, then **"O_2"** and finally **"Concentrator O2"** and a number. If the PRO2 check Elite® unit is hooked up to an operating concentrator, the device will automatically measure the concentration of the oxygen being produced and show the value on the LCD display. The unit's default operating mode automatically compensates for the argon that passes through the sieve beds, it will display a false reading (*approximately 91.8%*) if connected to an oxygen source other than a concentrator unless the specific actions discussed on pages 6-8 of this manual are taken. If the device is not hooked up to an oxygen source it will measure and display the concentration of oxygen in the ambient air (*usually 20.9%*).

To turn the PRO2 check Elite® device off, press and release the **"on/off"** button. The unit will display **"OFF"** and shut down. To conserve battery life, it automatically shuts down if any one of the unit's functions is not utilized for approximately 5 minutes.

Measuring Oxygen Concentrations:

Follow the steps below to measure the concentration of oxygen being supplied by an oxygen concentrator:

1. Make sure the concentrator has been running long enough (follow concentrator manufacturer's guidelines) to reach full operational output.
2. Make sure flow rate is above 2 LPM - preferably at the concentrator's highest output.
3. **Remove any humidifier from concentrator.**
4. Connect supply tubing to the concentrator oxygen outlet and the inlet port on the PRO2 check Elite® marked **"% oxygen/flow."**
5. Turn on the PRO2 check Elite® device (See above).
6. The indicator will stabilize in about 10 seconds and provide an accurate reading on the LCD display.
7. If there is any question to the accuracy of the reading, perform the "Pure Oxygen Verification Procedure" and if necessary the "Quick One Step Calibration Procedure" on page 7.

CAUTION: *Do not* check concentrator with humidifier in place. Humidity can affect unit's readings and damage the unit.

NOTES: *Never check a concentrator while holding down the* ***"pure O_2 /calibrate"*** button. You will get a false reading. You must hold down the ***"pure O_2 /calibrate"*** button to check unit against a source of USP oxygen (> 99.0%) cylinder or liquid oxygen.

FREQUENTLY ASKED QUESTIONS

Thank you for purchasing the PRO2 check Elite® *Multifunction Concentrator Indicator*. It will give you years of trouble-free operation. The following are some of the frequently asked questions about the operation of this device.

Do I have to calibrate my PRO2 check Elite® unit daily?

No. The PRO2 check Elite® indicator was calibrated at the factory.

How do I know that my PRO2 check Elite® device is accurately measuring concentrations?

To verify, simply connect the multifunctional unit to a source of either compressed gas or liquid USP oxygen (≥ 99.0%) at 2 LPM. Then turn on the device and hold down the **"pure O_2/calibrate"** button. As long as the display reads between **99% and 101%**, the unit is properly calibrated.

How often should I calibrate my PRO2 check Elite® unit?

As long as you can verify *(via the Pure Oxygen Verification Procedure)* that the unit is holding calibration against a USP oxygen (≥ 99.0%) source, the unit does not need calibration.

My accreditation organization as well as our internal policies require periodic calibration of this type of equipment. Can I calibrate the PRO2 check Elite® device to comply with these requirements?

Yes, if accreditation organizations or internal policies and procedures require routine calibration, instructions on calibrating the various functions of the device are found on pages 7-9 of this manual.

Can we also calibrate the pressure and flow modes?

Yes, instructions on calibrating (zeroing) the pressure and flow measurement functions of this device are found on page 9 of this manual.

Does the unit have to be turned off before verifying or calibrating?

Yes. The unit must be turned off and evacuated to room air before you begin the oxygen verification or calibration procedures. This is not necessary for flow or pressure calibration (zeroing).

UNIT SPECIFICATIONS

General Specifications

Physical Data

Dimensions: 3.60" W x 5.75" H x 1.29" D
(9.14 cm W x 14.6 cm H x 3.28 cm D)
Weight: 9 ounces (255.15 Grams)
Connector: (2) ¼" anodized aluminum hose barbs
Case: Solid color ABS plastic with threaded metal bolt channels

Battery: The battery capacity is a standard 9-volt "transistor" alkaline type battery with polarized terminals.
A rechargeable type battery is not recommended.

Operating Temperature: 32º F to 105º F (0º C to 41º C)

Storage Temperature: -29º F to 160º F (-34º C to 71º C)

Specifications Concentration Mode

Measured Oxygen Concentration Range: 20.9% to 100%
Response Time: 10 seconds
Accuracy: ± 2%, assuming proper calibration with a sample gas at a temperature of 32º F to 105º F (0º C to 41º C), and a flow rate of 2 to 5 LPM to the unit during calibration.
Input Gas Flow Rate: Use a flow rate of .5 to 10 LPM for concentrator sampling.
Sampling Frequency: Continuous
Vents: The unit vents through the side vent port.
Linearity: ± 2% of Full Scale
Sensor: Ultrasonic

Specifications Pressure Mode

Range: 0 to 25 PSIG (0 to 172 kPa)
Resolution: 0.1 PSIG (.1 up to 99.9 kPa; 1.0 over 100 kPa)
Accuracy: ± 1% of Full Scale

Specifications Flow Mode

Range: 0 to 10 LPM
Resolution: 0.1 LPM
Accuracy: ± .3 LPM (± 3% of full scale)

Measuring Oxygen Flows

To measure oxygen flow rates from an oxygen concentrator follow the steps below ***(Not recommended for flows below 0.5 LPM)***:

1. Connect the supply tube to the **"% oxygen/flow"** port and an operating concentrator. Set the concentrator flow output at desired flow rate.
2. Turn on the PRO2 check Elite® device.
3. Press the button on the upper right hand side of the PRO2 check Elite® unit marked **"flow."**
4. The LCD will display **"Flow LPM"** (indicating that the device is in the mode to measure flow). A numeric read out indicating the oxygen flow being delivered by the concentrator will display. (Example: "Flow LPM 2.1")
5. Set the flow from the concentrator to maximum while the indicator is still connected to it and compare the readings. If desired, measure and compare the readings at various flow rates.
6. To exit the Flow Mode, press the **"flow"** button again and the unit will return to the mode used to check oxygen concentrations.

NOTE: Your PRO2 check Elite® is factory calibrated to measure true mass flow. It is far more accurate than the "ball" type volumetric flow-meter on oxygen concentrators.

Measuring Concentrator Outlet Pressure

To measure an oxygen concentrator's output pressure follow the steps below:

1. Connect the supply tube to the device's **"pressure"** inlet port and an operating concentrator. Set the concentrator flow output @ 2 LPM or greater.
2. Turn on the PRO2 check Elite® device.
3. Press the button on the upper left-hand side of the PRO2 check Elite® unit marked **"pressure."**
4. The LCD will flash **"---"** and then alternately display either **"HPA"*** or **"PSI"** and a numeric read out indicating the output pressure of the concentrator. *(Example: alternately flashes "PSI" blank, "7.1 blank, "PSI" blank, "7.1" blank, etc.)*
5. Note and record the operating pressure indicated on the display. To exit the Pressure Mode, disconnect the supply tube. Press the **"pressure"** button again and the unit will return to the mode used to check oxygen concentration or press the **"flow"** button to go directly to that mode.

NOTE: When the supply tube is connected to the "pressure" inlet port of the PRO2 check Elite® unit and an operating concentrator, the oxygen flow from the concentrator is occluded by the pressure measurement instrumentation.. This will generally cause the concentration to drop and may trigger concentrator alarms and/or may cause the supply tube to pop off the fittings. For this reason it is suggested that when operating the PRO2 check Elite® device in the Pressure Mode, that the unit be set up quickly and the readings be taken as rapidly as possible.

CAUTION: *Do not* check concentrator in any indicator mode with a humidifier in place. Humidity can affect unit's readings.

HPA on the display represents Kilopascals (kPa)

INSTRUCTIONS FOR SPOT CHECKING LIQUID OXYGEN VESSELS or OXYGEN CYLINDERS

Although the *PRO2 check Elite® Multifunction Concentrator Indicator* is designed, as its name implies, to check the various functions of an oxygen concentrator, it can also be used to perform spot checks (± 2%) of gaseous or liquid oxygen.

To utilize the PRO2 check Elite® device for this purpose follow this procedure:

1. Connect the **"% oxygen/flow"** inlet port on the PRO2 check Elite® unit to a gaseous or liquid oxygen source (cylinder or liquid oxygen) via a supply tube.
2. Turn the O_2 flow on to 2 LPM.
3. Press the **"on/off"** button to turn the PRO2 check Elite® unit on.
4. When unit stabilizes the unit display will read "**Concentrator O_2 91.8**" *(approx. concentration)*
5. Press and continue to hold down the **"pure O_2/calibrate"** button.
6. Unit will display **"Pure O2"** and a numeric reading.
7. If the source gas is oxygen, the display should read between **99% and 101%**.
8. If the unit display reads **"err"**, **"---", "-U-"** or any other reading other than 99.9 (± 2%), the source gas may not be pure oxygen and should be quarantined for retesting using a more sophisticated method such as a Servomex* oxygen analyzer.

NOTE: PRO2 check Elite® Multifunction Concentrator Indicator can be used to spot check the identity and purity of gaseous or liquid oxygen only, it can not be used to perform or verify U.S.P. testing since it can not provide the required U.S.P. accuracy of ± 0.1%.

* Servomex Inc. - Sugarland, TX

ENVIRONMENTAL EFFECTS

Temperature

Under normal operating conditions 32º F to 105º F (0º C to 41º C), the ***PRO*** 2 check **Elite®** unit's microprocessor and temperature circuit will compensate for variations in temperature. The temperature during storage and shipping should not reach below -29ºF (-34º C) or above 160º F (71º C). *If the unit has been stored at other than normal room temperatures, allow unit to stabilize at room temperature for 15 to 30 minutes. Unit will stabilize quicker if turned on.*

Barometric Pressure

The PRO2 check Elite® multifunctional unit's microprocessor makes it unnecessary to recalibrate during minor altitude changes. Please verify calibration if used over 5,000 feet.

Optional Altitude Adjustment

The PRO 2 check Elite® is pre-set at the factory at 2000 feet above sea level. Depending on the altitude of the region in the world where the PRO2 check Elite® is being used, it may be necessary to re-set the altitude setting on the device. This is easily done by a qualified service technician who reviews and follows these simple instructions:

SET ALTITUDE COMPENSATION:

1. Press the On/Off switch to turn the PRO2 check Elite® OFF.
2. With The PRO2 check Elite® off, press and HOLD the FLOW switch, then press and release The On/Off switch. The PRO2 check Elite® displays "Pro", "O_2", then "---".
3. Release the flow switch. The PRO2 check Elite® displays "ELx" where x is a value from 0 to 7.
4. Press the FLOW switch to change altitude settings in increments of 1000 foot steps to the closest altitude of the current location. Example (EL3 is the setting for 3000 foot).
5. After approximately 10 seconds from the last switch press, The PRO2 check Elite® stores the current altitude setting and starts oxygen concentration measurement displaying "Concentrator", "O_2" , and a value.
   After performing the above calibration procedure, all functions of the PRO2 check Elite® should function within the tolerances specified in this manual.

Note: *If readings do not seem accurate, recalibrate the unit.*

Vibration

It is recommended that the unit be used in a stable position to prevent the display reading from fluctuating.

Note: *Unit will not withstand excessive shock or vibration.*

Relative Humidity/Water Vapor

The relative humidity (RH) of the gas being sampled will affect the reading being displayed. As the RH increases, the sample gas becomes diluted with water vapor. This decreases the percentage of all gases measured including oxygen. Gases from high-pressure cylinders and oxygen concentrators are basically dry (< 0.5% RH). Gas measured after a humidifier or that has a high RH can cause a reading up to 10% lower than the actual reading.

Note: *For accurate results, never measure oxygen percentage downstream from a humidifier. This can also damage the unit!*

MAINTENANCE

Setting Pressure Display Default *("HPA"* or "PSI"):*
The *PRO2 check Elite® Multifunction Concentrator Indicator* can measure and display pressure as either "HPA"* (Kilopascal) or "PSI" (Pounds per Square Inch). The user can set the default display to either measurement or change the default display at any time by doing the following:

1. With unit turned OFF - press and continue to hold the **"pressure"** button
2. While continuing to hold the **"pressure"** button - press the **"on/off"** button
3. The unit will display "**PRO2**" then "**O2**" followed by "**---**"
4. When "**---**" is displayed release the **"pressure"** button
5. The display will read either "**HPA**"* or "**PSI**"
6. Pressing the **"pressure"** button at this time will toggle the display between "**HPA**" and "**PSI**"
7. When the preferred view is displayed, wait 10 seconds until unit returns to concentrator mode and your default setting will be saved
8. To change the default setting, repeat the above procedure

Battery Replacement
When the LCD displays "**LO BATT**" in the lower left corner, the battery is low and should be replaced.

NOTE: The PRO2 check Elite® must be removed from the carrying case to replace battery. A spare battery is included with each unit.

Install a new 9-volt battery by sliding the battery door (located on the rear of the unit) away from the case. Connect the 9-volt battery to the standard 9-volt battery connection and lay the battery sideways in the battery compartment. Insert battery door by sliding door back onto unit in the reverse direction of opening.

Cleaning
The PRO2 check Elite® unit may be cleaned by wiping the case with a mild detergent or standard topical disinfectant and a soft cloth.

CAUTION: Do not let cleaning solution spill on or inside unit. Unit is not intended for any type of sterilization.

HPA on the display represents Kilopascals (kPa)

VERIFICATION & CALIBRATION INSTRUCTIONS (Concentrator Mode)

PURE OXYGEN VERIFICATION PROCEDURE

To quickly verify that the indicator unit is accurately measuring the concentration of oxygen being produced by a concentrator, perform the following steps:

1. Connect the **"% oxygen/flow"** inlet port on the PRO2 check Elite® unit to a USP oxygen(≥ 99.0%) source (cylinder or liquid oxygen) via a supply tube.
2. Turn the O_2 delivery flow to 2 LPM.
3. Press the **"on/off"** button to turn unit on.
4. When unit stabilizes the display will read - "**Concentrator O_2 91.8**" *(approx. concentration).*

*NOTE: When in the Concentrator Mode, the electronic components of the PRO2 check Elite® indicator automatically compensate for the argon found in the gas produced by an oxygen concentrator. As a result the display will read **91.8%** (± 2%) unless this function is over-ridden by pushing the "**pure O_2/calibrate**" button).*

5. Press and continue to hold down the **"pure O_2/calibrate"** button.
6. Unit will display **"Pure O_2"** and a numeric reading.
7. If the unit is properly calibrated, the display should read between **99% and 101%**. The unit is ready to use.
8. If the unit display reads "**err, "---", "-U-**" or any other reading other than 99.9 (± 2%), the unit should be recalibrated (See below).

QUICK "ONE STEP" PURE OXYGEN CALIBRATION

The following procedure can be used to quickly and easily calibrate the *Multifunction Concentrator Indicator* to pure oxygen:

1. Follow steps 1 through 6 of "Pure Oxygen Verification Procedure" above.
2. When the unit displays "**Pure O_2**" and a numeric reading, continue holding down the **"pure O_2/calibrate"** button.
3. After a few seconds, the LCD display (while continuing to read "**Pure O_2**") will start to alternately display "**CAL**" and a number.
4. Continue to hold the **"pure O_2/calibrate"** button down until the display stops alternating and simply displays **"Pure O_2 100"**
5. At that point, the unit is calibrated to pure oxygen and ready for use.

NOTE: If unit displays an O_2 concentration reading outside of the ± 2% tolerance range (eg.< 98% or >102%) unit will not "Quick Cal" and the full two step procedure on the following page must be followed.

VERIFICATION & CALIBRATION INSTRUCTIONS (Concentrator Mode Continued)

FULL "TWO STEP" CALIBRATION PROCEDURE

The following procedure may be used to calibrate the PRO2 check Elite® indicator to both room air and USP oxygen (≥ 99.0%):

1. Do not connect unit to oxygen source or introduce oxygen to the unit at this time
2. Turn unit on by pushing **"on/off"** button
3. Wait for the unit to stabilize at room air - and the LCD displays **"Concentrator O_2 20.9%"** (± 2%). *If necessary, airflow will purge the oxygen. Do not continue to flow air during the rest of this calibration process.*

NOTE: Do not exhale breath into unit. Moisture will affect calibration; a slight suction can be used to evacuate the sampling chamber.

4. When unit is stabilized at room air and displays **"Concentrator O_2 20.9%"** - turn unit OFF by pushing **"on/off"** button.
5. Next, hold the **"pure O_2/calibrate"** button down while pressing and releasing the **"on/off"** button.
6. Continue to hold down the **"pure O_2/calibrate"** button until the display reads **"---"**.
7. Release the **"pure O_2/calibrate"** button and the display will read **"CAL AIR"** .
8. Press and release the **"pure O_2/calibrate"** button again.
9. The unit's display will roll for approximately one minute while it calibrates to room air.
10. When the unit display reads **"CAL O_2"** - connect the PRO2 check Elite® inlet port marked **"% oxygen/flow"** to an oxygen source (cylinder or liquid) using the supplied tube.
11. Introduce USP oxygen (≥ 99.0%) at 2 LPM to the unit. ***(Do not use a humidifier).***
12. Press and release the **"pure O_2/calibrate"** button again.
13. The unit's display will roll for approximately one minute while it calibrates to oxygen.
14. When the calibration sequence is complete the unit will display **"CAL END"**.
15. The unit is then calibrated and ready for use.
16. To verify that the unit is properly calibrated, repeat the "Pure Oxygen Verification Procedure" on page 7.

***NOTE:** If unit displays "**CAL ERR**" during verification or calibration procedures, check to ensure that you are using USP oxygen (≥ 99.9%) and that the flow is turned on to at least 2 LPM, then repeat procedure.*

***NOTE:** If unit displays "---" during verification or calibration procedures, release the "**pure O_2/calibrate**" button or the unit will shut off automatically.*

VERIFICATION & CALIBRATION INSTRUCTIONS (FLOW MODE)

FLOW VERIFICATION/CALIBRATION PROCEDURE – Zeroing

To verify that the PRO2 check Elite® *Multifunction Concentrator Indicator* is accurately measuring the output flow of an oxygen concentrator and calibrate it to "0" flow, perform the following steps:

1. With the unit not connected to an oxygen or pressure source *and* the unit turned on and stabilized, the LCD will display **"Concentrator O_2"** and a number
2. Press the **"flow"** button to enter the Flow Mode; the LCD will display **"Flow LPM"** and a number
3. While still introducing no flow into the unit, press and hold the **"pure O_2/calibrate"** button for approximately 4 seconds
4. The unit will alternately flash **"0.0"** and **"CAL"** while the **"pure O_2/calibrate"** button is being held
5. After about 4 seconds release the **"pure O_2/calibrate"** button and the unit is ready for use

VERIFICATION & CALIBRATION INSTRUCTIONS (PRESSURE MODE)

PRESSURE VERIFICATION/CALIBRATION PROCEDURE – Zeroing

To verify that the PRO2 check Elite® *Multifunction Concentrator Indicator* is accurately measuring the output pressure of an oxygen concentrator and calibrate it to "0" pressure, perform the following steps:

1. With the unit not connected to an oxygen or pressure source and the unit turned on and stabilized, the LCD will display **"Concentrator O_2"** and a number.
2. Press the **"pressure"** button to enter the Pressure Mode; the LCD will alternately display either **"PSI"** or **"HPA"*** and then alternately flash a number.
3. While still introducing no flow into the unit, press and hold the **"pure O_2/calibrate"** button for approximately 4 seconds.
4. The unit will display either **"PSI"** or **"HPA"*** and then alternately flash that with **"0.0"** and **"CAL"** while the **"pure O_2/calibrate"** button is being held.
5. After about 4 seconds release the **"pure O_2/calibrate"** button and the unit is ready for use.

If any problems are encountered during the calibration sequences, contact Salter Labs at 1-800-421-0024 or 1-661-854-3166.

HPA on the display represents Kilopascals (kPa)